

## Claims

What is claimed is:

1. A method for storing a data set having an enabled probe identification component and an associated data component in a buffer, comprising:
  - storing the data set at a current offset if the buffer has sufficient space to store the data set between a current offset and a limit of the buffer and the buffer is not marked as wrapped;
  - marking the buffer as wrapped, setting the current offset to zero and setting a wrapped offset to zero, if the buffer does not have sufficient space to store the data set between a current offset and a limit of the buffer; and
  - incrementing the wrapped offset by a stored data set size until there is sufficient space between the current offset and the wrapped offset to store the data set if the buffer is marked as wrapped, wherein the stored data set size is determined using an enabled probe identification associated with the stored data set.
2. The method of claim 1, further comprising:
  - storing the data set at the current offset if there is sufficient space between the current offset and the wrapped offset and the buffer is marked as wrapped.
3. The method of claim 2, further comprising:
  - incrementing the current offset by a data set size after the data set has been stored.
4. The method of claim 3, further comprising:
  - invalidating a buffer space between the current offset and the wrapped offset.
5. The method of claim 4, wherein the buffer space is invalidated by assigning each word within the buffer space a reserved enabled probe identification denoting a zero-length data component.

6. The method of claim 4, wherein the buffer space is invalidated by assigning each word within the buffer space a reserved enabled probe identification denoting a zero-length data component.
7. The method of claim 1, further comprising:
  - invalidating a buffer space between the current offset and the limit of the buffer if the buffer is not wrapped and the buffer does not have sufficient space to store the data set between a current offset and a limit of the buffer.
8. The method of claim 1, further comprising:
  - obtaining the data from an instrumented program using a probe;
  - associating the data with an enabled probe identification; and
  - storing the data in the data set, wherein the enabled probe identification is stored in the enabled probe identification component and the data is stored in the associated data set component.
9. The method of claim 1, further comprising:
  - storing the data set at the current offset if there is sufficient space between the current offset and the wrapped offset, the buffer is marked as wrapped, and the wrapped offset is not equal to the limit of the buffer.
10. The method of claim 1, further comprising:
  - determining whether the wrapped offset is equal to the limit of the buffer;
  - storing the data set at the current offset if there is sufficient space between the current offset and the wrapped offset, the buffer is marked as wrapped, and the wrapped offset is not equal to the limit of the buffer; and
  - setting the wrapped offset to zero and storing the data set at the current offset if the buffer is marked as wrapped and the wrapped offset is equal to the limit of the buffer.

11. The method of claim 1, further comprising:
  - defining a tracing function wherein the tracing function comprises an action;
  - associating the action with the enable probe identification; and
  - associating the probe with the enabled probe identification.
12. The method of claim 11, wherein the tracing function is defined by a consumer.
13. The method of claim 11, wherein the enabled probe identification is defined on a per-consumer basis.
14. The method of claim 1, wherein the enabled probe identification associated with the stored data set is used as a reference in to an enabled probe identification-metadata table.
15. The method of claim 1, wherein the enabled probe identification is associated with metadata.
16. The method of claim 1, wherein the data set is stored in a kernel-level buffer.
17. A system for storing a data set, wherein the data set comprises an enabled probe identification component and a data component, in a buffer comprising:
  - a probe configured to obtain data from an instrumented program;
  - a tracing framework configured to associate the probe with an enabled probe identification; and
  - a buffer configured to store the data set,wherein the data is stored in the data component and the enabled probe identification is stored in the enabled probe identification component, and wherein the buffer is configured to store the data set by:
  - storing the data set at a current offset if the buffer has sufficient space to store the data set between a current offset and a limit of the buffer and the buffer is not marked as wrapped;

marking the buffer as wrapped, setting the current offset to zero and setting a wrapped offset to zero, if the buffer does not have sufficient space to store the data set between a current offset and a limit of the buffer; and

incrementing the wrapped offset by a stored data set size until there is sufficient space between the current offset and the wrapped offset to store the data set if the buffer is marked as wrapped, wherein the stored data set size is determined using an enabled probe identification associated with the stored data set.

18. The system of claim 17, further comprising:

a consumer defining an action, wherein the tracing framework assigns the enabled probe identification to the action.

19. The system of claim 17, further comprising:

an enabled probe identification-metadata table relating the enabled probe identification to metadata.

20. The system of claim 17, wherein the enabled probe identification is defined with respect to the consumer.